

Preliminary Classification:

Proposed Class:

Subclass:

NOTE: "All applicants are requested to include a preliminary classification on newly filed patent applications. The preliminary classification, preferably class and subclass designations, should be identified in the upper right-hand corner of the letter of transmittal accompanying the application papers, for example "Proposed Class 2, subclass 129." M.P.E.P. § 601, 7th ed.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Box Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

NEW APPLICATION TRANSMITTAL

Transmitted herewith for filing is the patent application of

Inventor(s): MEIFEN WANG

WARNING: 37 C.F.R. § 1.41(a)(1) points out:

"(a) A patent is applied for in the name or names of the actual inventor or inventors.

"(1) The inventorship of a nonprovisional application is that inventorship set forth in the oath or declaration as prescribed by § 1.63, except as provided for in § 1.53(d)(4) and § 1.63(d). If an oath or declaration as prescribed by § 1.63 is not filed during the pendency of a nonprovisional application, the inventorship is that inventorship set forth in the application papers filed pursuant to § 1.53(b), unless a petition under this paragraph accompanied by the fee set forth in § 1.17(d) is filed supplying or changing the name or names of the inventor or inventors."

For (title):

PARKING TOLL SYSTEM

CERTIFICATION UNDER 37 C.F.R. § 1.10*

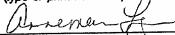
(Express Mail label number is mandatory.)

(Express Mail certification is optional.)

I hereby certify that this New Application Transmittal and the documents referred to as attached therein are being deposited with the United States Postal Service on this date March 30, 2000, in an envelope as "Express Mail Post Office to Addressee," mailing Label Number EL508861680US, addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

Annemarie Lazor

(type or print name of person mailing paper)



Signature of person mailing paper

WARNING: Certificate of mailing (first class) or facsimile transmission procedures of 37 C.F.R. § 1.8 cannot be used to obtain a date of mailing or transmission for this correspondence.

*WARNING: Each paper or fee filed by "Express Mail" must have the number of the "Express Mail" mailing label placed thereon prior to mailing, 37 C.F.R. § 1.10(b).

"Since the filing of correspondence under § 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will not be granted on petition." Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

(New Application Transmittal [4-1]—page 1 of 11)

03/30/00

JCS98 U.S. PTO

JCS98 U.S. PTO

03/30/00

1. Type of Application

This new application is for a(n)

(check one applicable item below)

☒ Original (nonprovisional)

☐ Design

☐ Plant

WARNING: Do not use this transmittal for a completion in the U.S. of an International Application under 35 U.S.C. § 371(c)(4), unless the International Application is being filed as a divisional, continuation or continuation-in-part application.

WARNING: Do not use this transmittal for the filing of a provisional application.

NOTE: If one of the following 3 items apply, then complete and attach **ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF A PRIOR U.S. APPLICATION CLAIMED** and a **NOTIFICATION IN PARENT APPLICATION OF THE FILING OF THIS CONTINUATION APPLICATION**.

☐ Divisional.

☐ Continuation.

☐ Continuation-in-part (C-I-P).

2. Benefit of Prior U.S. Application(s) (35 U.S.C. §§ 119(e), 120, or 121)

NOTE: A nonprovisional application may claim an invention disclosed in one or more prior filed copending nonprovisional applications or copending international applications designating the United States of America. In order for a nonprovisional application to claim the benefit of a prior filed copending nonprovisional application or copending international application designating the United States of America, each prior application must name as an inventor at least one inventor named in the later filed nonprovisional application and disclose the named inventor's invention claimed in at least one claim of the later filed nonprovisional application in the manner provided by the first paragraph of 35 U.S.C. § 112. Each prior application must also be:

(i) An international application entitled to a filing date in accordance with PCT Article 11 and designating the United States of America; or

(ii) Complete as set forth in § 1.51(b); or

(iii) Entitled to a filing date as set forth in § 1.53(b) or § 1.53(d) and include the basic filing fee set forth in § 1.16; or

(iv) Entitled to a filing date as set forth in § 1.53(b) and have paid therein the processing and retention fee set forth in § 1.21(f) within the time period set forth in § 1.53(f).

37 C.F.R. § 1.78(a)(1).

NOTE: If the new application being transmitted is a divisional, continuation or a continuation-in-part of a parent case, or where the parent case is an International Application which designated the U.S., or benefit of a prior provisional application is claimed, then check the following item and complete and attach **ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED**.

WARNING: If an application claims the benefit of the filing date of an earlier filed application under 35 U.S.C. §§ 120, 121 or 365(c), the 20-year term of that application will be based upon the filing date of the earliest U.S. application that the application makes reference to under 35 U.S.C. §§ 120, 121 or 365(c). (35 U.S.C. § 154(a)(2) does not take into account, for the determination of the patent term, any application on which priority is claimed under 35 U.S.C. §§ 119, 365(a) or 365(b).) For a c-i-p application, applicant should review whether any claim in the patent that will issue is supported by an earlier application and, if not, the applicant should consider canceling the reference to the earlier filed application. The term of a patent is not based on a claim-by-claim approach. See Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,205.

(New Application Transmittal [4-1]—page 2 of 11)

WARNING: When the last day of pendency of a provisional application falls on a Saturday, Sunday, or Federal holiday within the District of Columbia, any nonprovisional application claiming benefit of the provisional application must be filed prior to the Saturday, Sunday, or Federal holiday within the District of Columbia. See 37 C.F.R. § 1.78(a)(3).

- ☐ The new application being transmitted claims the benefit of prior U.S. application(s). Enclosed are ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

3. Papers Enclosed

- A. Required for filing date under 37 C.F.R. § 1.53(b) (Regular) or 37 C.F.R. § 1.153 (Design) Application

15 Pages of specification

3 Pages of claims

12 Sheets of drawing

WARNING: DO NOT submit original drawings. A high quality copy of the drawings should be supplied when filing a patent application. The drawings that are submitted to the Office must be on strong, white, smooth, and non-shiny paper and meet the standards according to § 1.84. If corrections to the drawings are necessary, they should be made to the original drawing and a high-quality copy of the corrected original drawing then submitted to the Office. Only one copy is required or desired. For comments on proposed then-new 37 C.F.R. § 1.84, see Notice of March 9, 1988 (1990 O.G. 57-62).

NOTE: "Identifying indicia, if provided, should include the application number or the title of the invention, inventor's name, docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application. This information should be placed on the back of each sheet of drawing a minimum distance of 1.5 cm. (5/8 inch) down from the top of the page . . . " 37 C.F.R. § 1.84(c).

(complete the following, if applicable)

- ☐ The enclosed drawing(s) are photograph(s), and there is also attached a "PETITION TO ACCEPT PHOTOGRAPH(S) AS DRAWING(S)." 37 C.F.R. § 1.84(b).
- ☒ formal
- ☐ Informal

B. Other Papers Enclosed

7 Pages of declaration and power of attorney

1 Pages of abstract

1 Other (title page)

4. Additional papers enclosed

- ☐ Amendment to claims
- ☐ Cancel in this applications claims _____ before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)
- ☐ Add the claims shown on the attached amendment. (Claims added have been numbered consecutively following the highest numbered original claims.)
- ☒ Preliminary Amendment
- ☐ Information Disclosure Statement (37 C.F.R. § 1.98)
- ☐ Form PTO-1449 (PTO/SB/08A and 08B)
- ☐ Citations

- ☐ Declaration of Biological Deposit
- ☐ Submission of "Sequence Listing," computer readable copy and/or amendment pertaining thereto for biotechnology invention containing nucleotide and/or amino acid sequence.
- ☐ Authorization of Attorney(s) to Accept and Follow Instructions from Representative
- ☐ Special Comments
- ☐ Other

5. Declaration or oath (including power of attorney)

NOTE: A newly executed declaration is not required in a continuation or divisional application provided that the prior nonprovisional application contained a declaration as required, the application being filed is by all or fewer than all the inventors named in the prior application, there is no new matter in the application being filed, and a copy of the executed declaration filed in the prior application (showing the signature or an indication thereon that it was signed) is submitted. The copy must be accompanied by a statement requesting deletion of the names of person(s) who are not inventors of the application being filed. If the declaration in the prior application was filed under § 1.47, then a copy of that declaration must be filed accompanied by a copy of the decision granting § 1.47 status or, if a nonsigning person under § 1.47 has subsequently joined in a prior application, then a copy of the subsequently executed declaration must be filed. See 37 C.F.R. §§ 1.63(d)(1)-(3).

NOTE: A declaration filed to complete an application must be executed, identify the specification to which it is directed, identify each inventor by full name including family name and at least one given name, without abbreviation together with any other given name or initial, and the residence, post office address and country or citizenship of each inventor, and state whether the inventor is a sole or joint inventor. 37 C.F.R. § 1.63(a)(1)-(4).

☒ Enclosed

Executed by

(check all applicable boxes)

☒ inventor(s).

☐ legal representative of inventor(s).
37 C.F.R. §§ 1.42 or 1.43.

☐ joint inventor or person showing a proprietary interest on behalf of inventor who refused to sign or cannot be reached.

☐ This is the petition required by 37 C.F.R. § 1.47 and the statement required by 37 C.F.R. § 1.47 is also attached. See item 13 below for fee.

☐ Not Enclosed.

NOTE: Where the filing is a completion in the U.S. of an International Application or where the completion of the U.S. application contains subject matter in addition to the International Application, the application may be treated as a continuation or continuation-in-part, as the case may be, utilizing ADDED PAGE FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION CLAIMED.

☐ Application is made by a person authorized under 37 C.F.R. § 1.41(c) on behalf of all the above named inventor(s).

(The declaration or oath, along with the surcharge required by 37 C.F.R. § 1.16(e) can be filed subsequently).

☐ Showing that the filing is authorized.
(not required unless called into question. 37 C.F.R. § 1.41(d))

(New Application Transmittal [4-1]—page 4 of 11)

6. Inventorship Statement

WARNING: If the named inventors are each not the inventors of all the claims an explanation, including the ownership of the various claims at the time the last claimed invention was made, should be submitted.

The inventorship for all the claims in this application are:

☒ The same.

or

- ☐ Not the same. An explanation, including the ownership of the various claims at the time the last claimed invention was made,
- ☐ is submitted.
 - ☐ will be submitted.

7. Language

NOTE: An application including a signed oath or declaration may be filed in a language other than English. An English translation of the non-English language application and the processing fee of \$130.00 required by 37 C.F.R. § 1.17(k) is required to be filed with the application, or within such time as may be set by the Office. 37 C.F.R. § 1.52(d).

☒ English

☐ Non-English

- ☐ The attached translation includes a statement that the translation is accurate. 37 C.F.R. § 1.52(d).

8. Assignment

☐ An assignment of the invention to _____

- ☐ is attached. A separate ☐ "COVER SHEET FOR ASSIGNMENT (DOCUMENT) ACCOMPANYING NEW PATENT APPLICATION" or ☐ FORM PTO 1595 is also attached.

☐ will follow.

NOTE: "If an assignment is submitted with a new application, send two separate letters-one for the application and one for the assignment." Notice of May 4, 1990 (1114 O.G. 77-78).

WARNING: A newly executed "CERTIFICATE UNDER 37 C.F.R. § 3.73(b)" must be filed when a continuation-in-part application is filed by an assignee. Notice of April 30, 1993, 1150 O.G. 62-64.

(New Application Transmittal [4-1]—page 5 of 11)

9. Certified Copy

Certified copy(ies) of application(s)

Country	Appln. No.	Filed
Country	Appln. No.	Filed
Country	Appln. No.	Filed

from which priority is claimed

- ☐ Is (are) attached.
☐ will follow.

NOTE: The foreign application forming the basis for the claim for priority must be referred to in the oath or declaration. 37 C.F.R. § 1.55(a) and 1.63.

NOTE: This item is for any foreign priority for which the application being filed directly relates. If any parent U.S. application or International Application from which this application claims benefit under 35 U.S.C. § 120 is itself entitled to priority from a prior foreign application, then complete item 18 on the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

10. Fee Calculation (37 C.F.R. § 1.16)

- A. ☒ Regular application

CLAIMS AS FILED				
Number filed	Number Extra	Rate	Basic Fee 37 C.F.R. § 1.16(a)	
			\$760.00	690.00
Total				
Claims (37 C.F.R. § 1.16(c))	10 - 20 = 0	×	\$ 18.00	
Independent				
Claims (37 C.F.R. § 1.16(b))	2 - 3 = 0	×	\$ 78.00	
Multiple dependent claim(s),				
if any (37 C.F.R. § 1.16(d))		+	\$260.00	

- ☐ Amendment cancelling extra claims is enclosed.
☐ Amendment deleting multiple-dependencies is enclosed.
☐ Fee for extra claims is not being paid at this time.

NOTE: If the fees for extra claims are not paid on filing they must be paid or the claims cancelled by amendment, prior to the expiration of the time period set for response by the Patent and Trademark Office in any notice of fee deficiency. 37 C.F.R. § 1.16(d).

Filing Fee Calculation \$ 690.00

- B. ☐ Design application
(\$310.00—37 C.F.R. § 1.16(f))

Filing Fee Calculation

\$ _____

- C. ☐ Plant application
(\$480.00—37 C.F.R. § 1.16(g))

Filing fee calculation

\$ _____

11. Small Entity Statement(s)

- ☒ Statement(s) that this is a filing by a small entity under 37 C.F.R. § 1.9 and 1.27 is (are) attached.

WARNING: "Status as a small entity must be specifically established in each application or patent in which the status is available and desired. Status as a small entity in one application or patent does not affect any other application or patent, including applications or patents which are directly or indirectly dependent upon the application or patent in which the status has been established. The refiling of an application under § 1.53 as a continuation, division, or continuation-in-part (including a continued prosecution application under § 1.53(d)), or the filing of a reissue application requires a new determination as to continued entitlement to small entity status for the continuing or reissue application. A nonprovisional application claiming benefit under 35 U.S.C. § 119(e), 120, 121, or 365(c) of a prior application, or a reissue application may rely on a statement filed in the prior application or in the patent if the nonprovisional application or the reissue application includes a reference to the statement in the prior application or in the patent or includes a copy of the statement in the prior application or in the patent and status as a small entity is still proper and desired. The payment of the small entity basic statutory filing fee will be treated as such a reference for purposes of this section." 37 C.F.R. § 1.28(a)(2).

WARNING: "Small entity status must not be established when the person or persons signing the . . . statement can unequivocally make the required self-certification." M.P.E.P., § 509.03, 6th ed., rev. 2, July 1996 (emphasis added).

(complete the following, if applicable)

- ☐ Status as a small entity was claimed in prior application _____ / _____, filed on _____, from which benefit is being claimed for this application under:

35 U.S.C. § ☐ 119(e),
☐ 120,
☐ 121,
☐ 365(c),

and which status as a small entity is still proper and desired.

- ☐ A copy of the statement in the prior application is included.

Filing Fee Calculation (50% of A, B or C above)

\$ 345.00

NOTE: Any excess of the full fee paid will be refunded if small entity status is established and a refund request are filed within 2 months of the date of timely payment of a full fee. The two-month period is not extendable under § 1.136, 37 C.F.R. § 1.28(a).

12. Request for International-Type Search (37 C.F.R. § 1.104(d))

(complete, if applicable)

- ☐ Please prepare an international-type search report for this application at the time when national examination on the merits takes place.

13. Fee Payment Being Made at This Time

☐ Not Enclosed

☐ No filing fee is to be paid at this time.

(This and the surcharge required by 37 C.F.R. § 1.16(e) can be paid subsequently.)

☒ Enclosed

☒ Filing fee

\$ 345.00

☐ Recording assignment

(\$40.00; 37 C.F.R. § 1.21(h))

(See attached "COVER SHEET FOR
ASSIGNMENT ACCOMPANYING NEW
APPLICATION".)

\$ _____

☐ Petition fee for filing by other than all the
inventors or person on behalf of the inventor
where inventor refused to sign or cannot be
reached

(\$130.00; 37 C.F.R. §§ 1.47 and 1.17(i))

\$ _____

☐ For processing an application with a
specification in

a non-English language

(\$130.00; 37 C.F.R. §§ 1.52(d) and 1.17(k))

\$ _____

☐ Processing and retention fee

(\$130.00; 37 C.F.R. §§ 1.53(d) and 1.21(l))

\$ _____

☐ Fee for international-type search report

(\$40.00; 37 C.F.R. § 1.21(e))

\$ _____

NOTE: 37 C.F.R. § 1.21(f) establishes a fee for processing and retaining any application that is abandoned for failing to complete the application pursuant to 37 C.F.R. § 1.53(f) and this, as well as the changes to 37 C.F.R. §§ 1.53 and 1.78(a)(1), indicate that in order to obtain the benefit of a prior U.S. application, either the basic filing fee must be paid, or the processing and retention fee of § 1.21(f) must be paid, within 1 year from notification under § 53(f).

Total fees enclosed

\$ 345.00

14. Method of Payment of Fees

☒ Check in the amount of \$ 345.00

☐ Charge Account No. _____ in the amount of
\$ _____

A duplicate of this transmittal is attached.

NOTE: Fees should be itemized in such a manner that it is clear for which purpose the fees are paid. 37 C.F.R. § 1.22(b).

15. Authorization to Charge Additional Fees

WARNING: If no fees are to be paid on filing, the following items should *not* be completed.

WARNING: Accurately count claims, especially multiple dependent claims, to avoid unexpected high charges, if extra claim charges are authorized.

- ☒ The Commissioner is hereby authorized to charge the following additional fees by this paper and during the entire pendency of this application to Account No. 23-0442:

☒ 37 C.F.R. § 1.16(a), (f) or (g) (filing fees)

☐ 37 C.F.R. § 1.16(b), (c) and (d) (presentation of extra claims)

NOTE: Because additional fees for excess or multiple dependent claims not paid on filing or on later presentation must only be paid or these claims cancelled by amendment prior to the expiration of the time period set for response by the PTO in any notice of fee deficiency (37 C.F.R. § 1.16(d)), it might be best not to authorize the PTO to charge additional claim fees, except possibly when dealing with amendments after final action.

☐ 37 C.F.R. § 1.16(e) (surcharge for filing the basic filing fee and/or declaration on a date later than the filing date of the application)

☐ 37 C.F.R. § 1.17(a)(1)–(5) (extension fees pursuant to § 1.136(a)).

☐ 37 C.F.R. § 1.17 (application processing fees)

NOTE: "... A written request may be submitted in an application that is an authorization to treat any concurrent or future reply, requiring a petition for an extension of time under this paragraph for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. An authorization to charge all required fees, fees under § 1.17, or all required extension of time fees will be treated as a constructive petition for an extension of time in any concurrent or future reply requiring a petition for an extension of time under this paragraph for its timely submission. Submission of the fee set forth in § 1.17(a) will also be treated as a constructive petition for an extension of time in any concurrent reply requiring a petition for an extension of time under this paragraph for its timely submission." 37 C.F.R. § 1.136(a)(3).

☐ 37 C.F.R. § 1.18 (issue fee at or before mailing of Notice of Allowance, pursuant to 37 C.F.R. § 1.311(b))

NOTE: Where an authorization to charge the issue fee to a deposit account has been filed before the mailing of a Notice of Allowance, the issue fee will be automatically charged to the deposit account at the time of mailing the notice of allowance. 37 C.F.R. § 1.311(b).

NOTE: 37 C.F.R. § 1.28(b) requires "Notification of any change in status resulting in loss of entitlement to small entity status must be filed in the application . . . prior to paying, or at the time of paying, . . . the issue fee. . . ." From the wording of 37 C.F.R. § 1.28(b), (a) notification of change of status must be made even if the fee is paid as "other than a small entity" and (b) no notification is required if the change is to another small entity.

(New Application Transmittal [4-1]—page 9 of 11)

16. Instructions as to Overpayment

NOTE: "... Amounts of twenty-five dollars or less will not be returned unless specifically requested within a reasonable time, nor will the payer be notified of such amounts; amounts over twenty-five dollars may be returned by check or, if requested, by credit to a deposit account." 37 C.F.R. § 1.26(a).

- ☒ Credit Account No. 23-0442
☐ Refund

Reg. No. 40,061

Tel. No. (203) 261-1234

Customer No. 004955

Kenneth Q. Lao

SIGNATURE OF PRACTITIONER

Kenneth Q. Lao

(type or print name of attorney)

Ware, Fressola, Van Der Sluys & Adolphson LLP

P.O. Address Bradford Green, Building Five
755 Main Street, P.O. Box 224
Monroe, CT 06468

☐ **Incorporation by reference of added pages**

(check the following item if the application in this transmittal claims the benefit of prior U.S. application(s) (including an international application entering the U.S. stage as a continuation, divisional or C-I-P application) and complete and attach the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED)

- ☐ Plus Added Pages for New Application Transmittal Where Benefit of Prior U.S. Application(s) Claimed

Number of pages added _____

- ☐ Plus Added Pages for Papers Referred to in Item 4 Above

Number of pages added _____

- ☐ Plus added pages deleting names of inventor(s) named in prior application(s) who is/are no longer inventor(s) of the subject matter claimed in this application.

Number of pages added _____

- ☐ Plus "Assignment Cover Letter Accompanying New Application"

Number of pages added _____

☒ **Statement Where No Further Pages Added**

(if no further pages form a part of this Transmittal, then end this Transmittal with this page and check the following item)

- ☒ This transmittal ends with this page.

**VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) & 1.27(b)) - INDEPENDENT INVENTOR**

Docket Number
890-003.003

Applicant or Patentee: MEIFEN WANG

Serial or Patent No: To Be Assigned

Filed or Issued: Herewith

Title: Parking Toll System

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office described in:

- ☒ the specification filed herewith with title as listed above.
☐ the application identified above.
☐ the patent identified above.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ no such person, concern, or organization exists.
☐ each such person, concern or organization is listed below:

Separate verified statements are required from each named person, concerned or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF INVENTOR Meifen WANG

SIGNATURE *Meifen Wang* DATE March 10, 2000

NAME OF INVENTOR _____

SIGNATURE _____ DATE _____

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of :

Meifen Wang :

Serial No. To Be Assigned :

Filed Herewith :

For: **PARKING TOLL SYSTEM**

Box PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

Please preliminarily amend the above-captioned patent application as follows:

IN THE SPECIFICATION:

On page 2, line 15: Please delete "drive" and substitute therefor --the driver drives the--.

On page 2, line 18: After "of" please insert --being--.

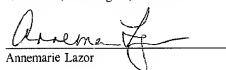
On page 3, line 12: Please delete "SMS" and substitute therefor --SME--.

On page 3, line 14: Please delete "SMS" and substitute therefor --MSC--.

On page 8, line 25: Please delete "instruct" and substitute therefor --instructs--.

On page 9, line 9: After "Then" please insert --the driver--.

I hereby certify that this correspondence is being deposited with the United States Postal Service on this date, March 30, 2000, in an envelope as "Express Mail Post Office to Addressee," Mailing Label No. EL508861680US, addressed to the Assistant Commissioner for Patents, Washington, DC 20231


Annemarie Lazor

- On page 9, line 11: Please delete "Correspondingly" and substitute therefor --Accordingly--.
- On page 11, line 15: After "Then" please insert --the driver--.
- On page 11, line 16: Please delete "an" and the hard return after and substitute therefore --and--.
- On page 11, line 17: Please delete the first occurrence of the letter "d".
- On page 12, line 23: After "will" please delete "driver that parking service is rejected and request" and substitute therefore --inform the driver that parking service is rejected and will ask the--.
- On page 14, line 2: Before "inserts" please insert --the driver--.
- On page 14, line 23: Please delete "illegal parking" and substitute therefor --illegally parked--.

IN THE ABSTRACT:

- On page 19, line 3: Please delete "comprises" and substitute therefor --comprising--.
- On page 19, line 4: After "system" please insert --is disclosed--.


REMARKS

Applicant has amended the specification herein to correct instances of improper usage of the English language and other minor corrections. No new matter is introduced by way of amendment.

Respectfully submitted,

Date: March 30, 2000

WARE, FRESSOLA, VAN DER SLUYS
& ADOLPHSON LLP
Bradford Green, Building Five
755 Main Street, P.O. Box 224
Monroe, CT 06468
Telephone: (203) 261-1234
USPTO Customer No. 004955



Kenneth Q. Lao
Attorney for the Applicant
Registration No. 40,061

PATENT
Attorney Docket No. 890-003.003

UNITED STATES PATENT APPLICATION

of

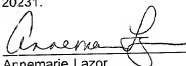
Meifen Wang

for a

PARKING TOLL SYSTEM

CERTIFICATE OF MAILING UNDER 37 CFR 1.10

I hereby certify that this correspondence is being deposited with the United States Postal Service on this date, March 30, 2000, in an envelope marked as "Express Mail Post Office to Addressee," Mailing Label Number EL508861680US, addressed to the Assistant Commissioner for Patents, Washington, DC 20231.


Annemarie Lazor

PARKING TOLL SYSTEM

BACKGROUND OF THE INVENTION

1. Field of the Invention

5 The present invention relates to a system for managing parking toll, and more particularly to a parking toll system effected through the operation of mobile phone.

2. Description of Related Art

10 Parking toll systems are generally categorized as on-street parking toll and parking lot toll systems. As to on-street parking toll, it is further categorized as coin-operated parking meter and tollbooth which are detailed below. As to coin-operated parking meter on the street, driver must prepare sufficient coins prior to parking. Note that sufficient coins means the amount of coins that driver has to prepare according to the period of time which he/she intends to occupy that
15 parking space. In a typical example, driver first inserts coin(s) into the parking meter prior to legally occupying the parking space. In some cases, parking meter is designed to have only accommodate a maximum of a certain period of time per use. As such, driver has to return to that space to insert coin(s) again if he/she wants to continue to occupy that space when the time is about to expire. Driver
20 can not have his/her extra coin(s) return if he/she leave earlier than expected. Also, such parking space is not available for service if the coin box is full.

 As to tollbooth, a toll keeper must repeatedly inspect those parking meters. If there is a vehicle parked in one of the parking spaces, toll keeper will immediately issue a ticket to that vehicle and retain the stub. Toll keeper will issue a new ticket
25 if the vehicle still occupies that parking space when predetermined parking time is expired. Alternatively, toll keeper changes the parking time on the previous ticket and stub. Further, driver has to pay the toll at leaving. At end of work, toll keeper

must calculate and check the money received prior to forwarding the money and stubs to parking management office. Also, the office has to create record(s), file, and do all the other maintenance. In view of the foregoing, the whole toll process is very tedious, time consuming, and inconvenient.

- 5 In one type of on-street parking toll system, a parking ticket is issued to driver at entrance of parking lot by a toll keeper or a time clock. Likewise, a toll is charged to driver at exit of parking lot by a toll keeper or a time clock when driver leaves. Similarly, at end of work, toll keeper must calculate and check the money received prior to forwarding the money to parking management office. Also, the
10 office has to create record(s), file, and do all the other maintenance. As such, the whole toll process is also very tedious, time consuming, and inconvenient.

- In another type of on-street parking toll system, a card is issued to driver automatically at the entrance. Then gate bar is lifted to allow vehicle to pass through. Driver should insert coin(s) at collector device in order to activate the
15 device to print a leaving time on the card. Then drive vehicle to the exit to insert card in the card reader. Finally, gate bar is lifted again to allow vehicle to leave once payment is validated by the card reader. This technique also suffers the drawbacks of tedious and time consuming. Further, driver should prepare coin(s) in advance.

- 20 As to the mobile phone systems employed by a mobile phone company, there are GSM (Global System for Mobile Communications), CDMA (Code Division Multiple Access), TDMA (Time Division Multiple Access), and AMPS (Advanced Mobile Phone Service) available now in which GSM is the most widely employed. It is also known that Data Service equipment is provided in each of
25 above systems including SMS (Short Messaging Services), WAP (Wireless Application Protocol), GPRS (General Packet Radio Services), and MLS (Mobile Location Services). Each of above Data Services is applicable to the invention as

5 detailed later. As to the SMS, for example, you can leave your message in a voice mail box if you make a call to a turned-off mobile phone. Voice mail box will immediately inform the called party that there is a message recorded once the mobile phone is turned on because the SMS function provided by GSM is activated simultaneously. It is quite convenient. As such, the SMS is further illustrated by means of GSM as detailed below.

TERMS DEFINITION

- 10 (1) SM (Short Message);
(2) SMS (Short Message Service);
(3) SC (Service Center);
(4) SMS (Short Message Entity);
(5) SMS-GMSC (Gateway MSC for SMS);
(6) SMS (Message Service Center); and
15 (7) MS (Message Service).

NETWORK STRUCTURE

As shown in FIG. 15, an SME is sent to MSC through SC and SMS-GMSC. Consequently, an MS is performed in compliance with European
20 Telecommunication Standard. SMS comprises storing and access both available on mobile phone services. This invention aims at expanding the application of mobile phone in parking toll by providing a system with specifically designed associated hardware and software.

25 SUMMARY OF THE INVENTION

It is thus an object of the present invention to provide a parking toll system without requiring driver to prepare coin(s) in advance and pay the toll at parking or

leaving. This system is performed through a simple operation of driver's mobile phone.

It is another object of the present invention to provide a convenient, labor saving, and effective toll collecting system for the management of parking facilities.

The above and other objects, features and advantages of the present invention will become apparent from the following detailed description taken with the accompanying drawings.

10 **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a schematic diagram showing a preferred embodiment of on-street parking toll system according to the invention in which four parking spaces are exemplified;

FIG. 2 is a schematic diagram showing a preferred embodiment of parking lot toll system according to the invention in which four parking spaces are exemplified;

FIG. 3 is a schematic diagram showing the structure of host shown in FIG. 1;

FIG. 4 is a block diagram showing the operation of parking communication box of host shown in FIG. 1;

FIG. 5 is a plan view of parking meter shown in FIG. 1;

FIG. 6 is a plan view of the keypad shown in FIG. 5;

FIG. 7 is a block diagram schematically showing the operation of parking meter of FIG. 5;

FIG. 8 is a schematic diagram showing the operation of the system shown in FIG. 2;

FIG. 9 is a block diagram showing the operation of host shown in FIG. 2;

FIG. 10 is a plan view of parking meter shown in FIG. 2;

FIG. 11 is a block diagram showing the operation of parking communication box of host shown in FIG. 2;

FIG. 12 is a block diagram schematically showing the operation of parking meter of FIG. 2;

5 FIG. 13 is a block diagram showing the operation of on-street parking toll system of the invention;

FIG. 14 is a block diagram showing the operation of parking lot toll system of the invention; and

10 FIG. 15 is a block diagram schematically showing the SMS network structure employed in GSM in accordance with the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 1 and 3 through 7, there is shown a on-street parking toll system constructed in accordance with the invention in which four parking spaces are exemplified. The system comprises a host 10 located in parking management office (not shown), a mobile phone communication box 11A connected to host 10, and a number of parking meters 20 each located on the curb adjacent to a corresponding parking space. As shown in FIGS. 3 and 4, host 10 is implemented as a personal computer (PC) being connected to mobile phone communication box 11A through RS-232 cable 12. Through SMS (Short Message Service) unit of GSM (TMDA, AMPS, CDMA, or PCS) provided by telephone company, host 10 can manage a number of parking meters 20 and receive a plurality of parking records of the current day (including mobile phone number, parking duration, and toll) sent from mobile phone 21 of parking meter 20 in an SM (Short Message).

25 As shown in FIGS. 5, 6, and 7, parking meter 20 uses an infrared detector 23 for detecting whether there is a vehicle parking at the corresponding parking space. Also, an LCD 24 for showing parking toll message, a keypad 22 for user to

input digits and perform other functions, a mobile phone 21 for transmitting and receiving parking message, and a microprocessor 25 for controlling above components.

- 5 Infrared detector 23 can transmit signals to microprocessor 25 when detecting a vehicle parked in the corresponding parking space to which cause microprocessor 25 to command embedded voicer (not shown) to issue a greeting such as "Welcome. Please dial 090195278". This number is also shown on the parking meter. Driver can dial his/her own mobile phone number. LCD 24 may also show the above parking space number. As such, driver may simply dial
- 10 parking space number through mobile phone to complete the parking registration. Additionally, driver may input plate number if such is required as heard through the voicer. Parking meter 20 will automatically record driver's mobile phone number and calculate parking time. At this time, LCD 24 shows the start time of parking on screen. Driver simply presses the "leaving" key 221 to finish parking.
- 15 Thereafter, voicer issues a greeting such as "Please come again. Your parking duration is 2 hours 20 minutes. Toll is 64 dollars." This toll will be included in driver's monthly phone bill. As stated above, through SMS of GSM provided by telephone company, host 10 can receive a plurality of parking records of the current day sent from mobile phone 21 of parking meter 20 in an SM. Host 10 will
- 20 call parking meter 20 in a regular batch manner for receiving the parking records. These parking records will be checked and filed. As a result, the parking management office can calculate the total amount of each parking occupant and the information will then be forwarded to the phone company so the tolls can be collected through phone bills.
- 25 Voicer will require driver to input password if driver inputs his/her mobile phone number through keypad 22 of parking meter 20. LCD 24 may show "Please input password" accordingly. Microprocessor 25 will immediately instruct

mobile phone 21 to be on line with telephone company for validating the password once the password input is complete. LCD 24 will show the start time of parking if the password is correct and calculate the duration of occupancy immediately. Otherwise, voicer will verbally issue a message such as "Password error. Please input again." LCD 24 will show the same accordingly.

Microprocessor 25 will instruct mobile phone 21 to call toll collector through beeper about the corresponding parking space number if no parking registration is sensed after 3 minutes (or any of other predetermined time periods) when vehicle parked in the parking space is detected. As a result, toll collector can go to the corresponding parking space to inform the driver that he/she has violated the parking regulations.

Similarly, parking meter 20 can provide a plurality of parking records of the current day to host 10 in a regular batch manner through SMS of GSM. Each of such parking records comprises mobile phone number, plate number, time, date, parking duration, and toll. As a result, host 10 can effectively manage parking toll as well as request telephone company to pay the toll.

Referring to FIGS. 2 and 8 through 12, there is shown a parking lot toll system constructed in accordance with the invention in which four parking spaces are exemplified. The system comprises a host 30, a mobile phone communication box 34 connected to host 30, a number of parking meters 40 each located adjacent to a corresponding parking space, an entrance monitor 50 at the entrance of parking lot, and an exit monitor 60 at the exit of parking lot. As shown in FIGS. 8 and 9, host 30 is implemented as a PC being connected to mobile phone communication box 34 through RS-232 cable 33. As shown in FIG. 8, mobile phone communication box 34 comprises a mobile phone 31 (or a dedicated phone line 311 for internet connection), a low carrier frequency device 32, a digital CODEC 32A, and associated driver programs. Entrance monitor 50

comprises a card reader 52, a display 51, a microprocessor 53, and a voicer 54. Exit monitor 60 comprises a card reader 62, a microprocessor 63, a printer 64, and a display 61. All of mobile phone communication box 34, entrance monitor 50, and exit monitor 60 are connected to host 30 through RS-232 cable 33. As such, 5 host 30 can manage a number of parking meters 40 by performing a parking management program.

It is designed that such parking lot toll system is applied to limited parking range. As such, host and parking meters are connected through cables for sending and receiving data. Low carrier frequency device 32 is provided in the 10 mobile phone communication box 34 of host 30 for obtaining an effective and high quality signal transmission. Low carrier frequency device 32 can convert voice signals sent from PC into 20 KHz signals. Such 20 KHz signals are further decoded as analog signals by CODEC 32A prior to broadcasting. To the contrary, when analog signals are received by mobile phone 31 (or a dedicated phone line 15 311 for internet connection) from parking meter 40, such analog signals will be encoded as digital voice signals by CODEC 32A. Then low carrier frequency device 32 converts the digital voice signals into 10 KHz low frequency signals prior to storing it in PC. Likewise, parking meter 40 comprises a low carrier frequency device 42 and a digital CODEC 32A for performing frequency 20 conversion and encoding/decoding respectively, thereby obtaining a high quality signal transmission.

Driver can dial parking lot telephone number through mobile phone when arriving at the entrance of parking lot. Host 30 will inform available parking space number to both driver and the corresponding parking meter 40 once it receives 25 the above call dialed by driver. Then microprocessor 45 instruct display 44 to flash for guiding vehicle to park in the correct parking space later (FIG. 10). At the same time, microprocessor 53 of entrance monitor 50 at the entrance activates

card reader 52 to print parking space number, driver's mobile phone number, and entering time and date on a card which in turn outputs from the slot of the card reader 52. Then microprocessor 53 activates display 51 to show parking space number as well as activates voicer 54 to verbally inform driver of the parking
5 space number. Gate bar will be lifted automatically when driver tears off the card. As such, driver can drive the vehicle to the designated parking space by the guidance of display 51 and voice broadcast by voicer 54. Parking meter 40 will inform host 30 when driver completes the parking. Driver should drive his/her vehicle to the exit monitor 60 at exit when leaving. Then inserts the card into card
10 reader 62. Microprocessor 63 then immediately instructs host 30 to calculate the toll. Correspondingly, host 30 informs microprocessor 63 about parking duration and toll. Then microprocessor 63 activates display 61 to show parking duration and toll. Consequently, printer 64 prints an invoice. Again, gate bar is lifted to allow vehicle to leave. Through SMS of GSM (TMDA, AMPS, CDMA, PCS, or any
15 of other system employed by telephone company), host 30 can send parking record(s) of each parking occupant to telephone company for combining the toll in each month's phone bill. This can effect a convenient, laborsaving, and effective toll collecting environment for facilitating the management of parking facility.

As shown in FIG. 10, parking meter 40 comprises an infrared detector 43 for
20 detecting whether there is a vehicle parked in the corresponding parking space, a large LED display 44 for showing parking space number, a low carrier frequency device 44, a digital CODEC 42A and associated driver programs. Parking meter 40 and host 30 are duplex connected such that host 30 can correctly control the parking condition of each parking meter 40.

25 FIG. 13 is a block diagram schematically showing the process of on-street parking toll system of the invention as detailed below.

1. At arrows 1-1a and 1-1b, driver uses his/her mobile phone to dial parking

space number. Parking meter receives the call and records the number. Then timer is activated to calculate time immediately. At arrows 1-2 and 1-3, driver may input his/her mobile phone number through keypad of parking meter. Then voicer requires driver to input password by means of voicer and display. Parking meter
5 then requests telephone company to validate the password once the password input is complete.

2. Telephone company alerts parking meter that password is correct. Then parking meter activates timer to calculate time. Additionally, driver may input plate number if such is required.

10 3. Driver simply presses the "leaving" key of parking meter to finish parking. Thereafter, voicer calculates the parking duration and toll. Further, parking meter provides a plurality of parking records of the current day to host and telephone company in a regular batch manner through SMS of GSM.

15 4. The received parking records are processed by telephone company based on phone number, time, and date to create a charge record of each parking occupant. For example, at the end of the month this charge is included in phone bill of the parking occupant.

20 5. The received parking records are also processed by parking management office based on phone number, time, date, and parking meter number for creating a charge record of each parking occupant. If desired, parking management office may classify and tabulate such records and check the amount with telephone company.

FIG. 14 is a block diagram schematically showing the process of parking lot toll system of the invention as detailed below.

25 1. Driver can dial parking lot telephone number through mobile phone when arriving at the entrance of parking lot for requesting parking. Host will make a record accordingly once it receives the above call.

2. Host instructs entrance monitor 50 to activate card reader to record driver's mobile phone number and entering time and date on a card as file. Then display of entrance monitor 50 shows parking space number. Voicer also verbally informs driver of the parking space number. Gate bar will be lifted automatically
- 5 when driver tears off the card.
3. Host instructs display of parking meter to flash for guiding because there is a vehicle about to park. Parking meter will inform host when driver completes parking. Host may, for example, activate speaker to request driver to drive his/her vehicle to the designated parking space if no parking registration is sensed after a
- 10 predetermined time.
4. Parking meter informs host about parking condition such as whether parking is complete. Parking meter informs host that vehicle has left the designated parking space.
5. Driver drives his/her vehicle to the exit monitor 60 at exit when leaving.
- 15 Then inserts the card into card reader. Host calculates the parking duration and toll and informs display to show the same. Consequently, printer prints an invoice. Again, gate bar is lifted to allow vehicle to leave.
6. Through SMS of GSM, host can send parking record(s) of each parking
- 20 occupant to telephone company in a regular batch manner.
7. The parking records sent by host are processed by telephone company based on phone number, time, and date for creating a charge record of each parking occupant. For example, at the end of the month this charge is included in phone bill of the parking occupant.
- 25 8. The received parking records are also processed by parking management office based on phone number, time, and date for creating a charge record of each parking occupant. If desired, parking management office may classify and

tabulate such records and check the amount with telephone company.

The on-street parking toll of the invention is summarized as below.

1. Infrared detector of parking meter instructs voice to inform driver to perform parking registration when detecting a vehicle parked in the corresponding parking space. Infrared detector also calculates time for validating whether driver has completed parking in three minutes.
2. Parking registration is fulfilled in one of two techniques as below:
 - A. Driver use his/her mobile phone to dial parking space number. Then input plate number when "Please input plate number" is heard. Parking registration is fulfilled when "Thank you" is heard.
 - B. Use keypad of parking meter to input driver's mobile phone number. Then display visually requests driver to input password. Parking meter requests telephone company to validate the mobile phone number and password once the mobile phone number and password input is complete. Display will show "Please input plate number" if mobile phone number and password both are correct. Driver may input plate number accordingly. Parking registration is fulfilled when "Parking registration is fulfilled. Thank you" is shown on display.
3. Parking meter will call toll collector to go to the designated parking space to inform driver that he/she has violated the parking regulations if no parking registration is sensed after 3 minutes.
4. Parking meter will inform driver to input password again if password is not correct. Parking meter will driver that parking service is rejected and request driver to leave immediately due to incorrect password. Parking meter will call toll collector to go to the designated parking space to inform driver that he/she has violated the parking regulations if that vehicle has not left after 3 minutes. Parking meter will calculate time immediately after parking registration is fulfilled. Then

parking duration and toll are shown alternatively on screen every five seconds during parking.

- 5 5. Driver simply presses the "leaving" key of parking meter to finish the parking. Thereafter, voicer stops calculating time. Then parking duration and toll are shown on display.

6. Parking meter provides a plurality of parking records of the current day to host and telephone company in a regular batch manner through SMS or GSM. Host and telephone company then process such records accordingly.

- 10 7. Telephone company will list each parking duration and toll on phone bill of the parking occupant.

8. Parking management office reserves the right to change tolls of different time periods, the longest allowable parking duration, and parking not allowed of respective parking space based on respective needs. Parking meter may be informed of such updates immediately.

- 15 The parking lot toll of the invention is summarized as below.

20 1. Parking registration: Driver can dial parking lot telephone number through mobile phone when arriving at the entrance of parking lot for requesting parking. Host will make a record including mobile phone number and entering time on a card of entrance monitor accordingly once it receives the above call. Entrance monitor then outputs the card and shows parking space number. Voicer and display may verbally and visually inform driver of the parking space number and requesting to tear off card. Parking registration is fulfilled when card is torn off. Voicer and display also verbally and visually inform driver accordingly if no parking space is available.

- 25 2. Parking: Host instructs parking meter that there is a vehicle about to park. Display then flashes for guiding the vehicle. Parking meter will inform host when driver completes parking.

3. Leaving: Driver drives his/her vehicle to the exit monitor at exit. Then inserts the card into card reader. Host calculates the parking duration and toll and informs display to show the same. Consequently, printer prints an invoice. Gate bar is lifted to allow vehicle to leave.

- 5 4. Host provides a plurality of parking records of the current day to telephone company through SMS of GSM. Telephone company will combine toll with phone bill of the parking occupant such that parking occupant can know each parking duration and toll.

- 10 5. Monitoring and management: Host can monitor the parking spaces, parking order, calculation of parking duration and toll, and check the same with telephone company, thereby effecting an automatic parking management.

ADVANTAGES OF THE INVENTION

- 15 1. Driver is not necessary to prepare coin(s) in advance and pay the toll when arriving or leaving. Toll is included in monthly phone bill, thus simplifying parking process and affording a convenient parking environment.

- 20 2. Parking management office reserves the right to change tolls of different time periods, the longest allowable parking duration, and reservation of parking spaces for specific needs. Thus an effective utilization of parking spaces is fulfilled.

- 25 3. An automatic parking management environment can be achieved through this parking lot toll system. As to on-street parking toll, only several toll collectors are hired to deal with illegal parking drivers if such occurred. Thus it effects a convenient, laborsaving, and effective toll collecting environment for facilitating the management of parking facility.

4. No flaw. Thus toll collector embezzlement is impossible.

5. Driver does not need to worry about overcharge due to the precise

WHAT IS CLAIMED IS:

1. A parking toll system comprising a on-street parking toll arrangement and a parking lot toll arrangement wherein parking management is achieved through a mobile phone or a wired phone and the parking toll is included in user's phone bill.
2. A parking toll system having a controller, the system comprising a on-street parking toll arrangement and a parking lot toll arrangement wherein SMS (Short Messaging Services), WAP (Wireless Application Protocol), GPRS (General Packet Radio Services), MLS (Mobile Location Services), and wired phone provided by telephone company are employed by the controller for transmitting and receiving data.
3. The parking toll system of claim 1, wherein the on-street parking toll arrangement comprising:
 - a host having a personal computer (PC) located in a parking management office including a first mobile phone connected to a mobile phone communication box through RS-232 cable; and
 - a plurality of parking meters each located adjacent to a corresponding parking space including a microprocessor, an infrared detector, a display, a keypad, and a second mobile phone.
4. The parking toll system of claim 2, wherein the on-street parking toll arrangement comprising:
 - a host having a personal computer (PC) located in a parking management office including a first mobile phone connected to a mobile phone communication

box through RS-232 cable; and

a plurality of parking meters each located adjacent to a corresponding parking space including a microprocessor, an infrared detector, a display, a keypad, and a second mobile phone.

5

5. The parking toll system of claim 1, wherein the parking lot toll arrangement comprising:

10 a host having a PC including one of a first mobile phone and a dedicated phone line for internet connection, a low carrier frequency device, and a first digital coder/decoder (CODEC) connected to a mobile phone communication box through RS-232 cable;

an entrance monitor located at the entrance of the parking lot being connected to the host through the RS-232 cable including a first card reader, a first display, a first microprocessor and a voice;

15 an exit monitor located at the exit of the parking lot being connected to the host through the RS-232 cable including a second card reader, a second microprocessor, a printer, and a second display;

a parking meter including a third microprocessor, a third display, an infrared detector, a second low carrier frequency device, and a second digital CODEC.

20

6. The parking toll system of claim 2, wherein the parking lot toll arrangement comprising:

25 a host having a PC including one of a first mobile phone and a dedicated phone line for internet connection, a low carrier frequency device, and a first digital coder/decoder (CODEC) connected to a mobile phone communication box through RS-232 cable;

an entrance monitor located at the entrance of the parking lot being

connected to the host through the RS-232 cable including a first card reader, a first display, a first microprocessor and a voicer;

an exit monitor located at the exit of the parking lot being connected to the host through the RS-232 cable including a second card reader, a second
5 microprocessor, a printer, and a second display;

a parking meter including a third microprocessor, a third display, an infrared detector, a second low carrier frequency device, and a second digital CODEC.

7. The parking toll system of claim 1, wherein the on-street parking toll
10 arrangement allows user to input a parking space number through the mobile phone to activate the system.

8. The parking toll system of claim 2, wherein the on-street parking toll
15 arrangement allows user to input a parking space number through the mobile phone to activate the system.

9. The parking toll system of claim 1, wherein the on-street parking toll
arrangement allows user to input a mobile phone number through the keypad of
the parking meter to activate the system after validated by telephone company.

20 10. The parking toll system of claim 2, wherein the on-street parking toll
arrangement allows user to input a mobile phone number through the keypad of
the parking meter to activate the system after validated by telephone company.

ABSTRACT OF THE DISCLOSURE

Parking toll systems comprises on-street parking toll system and parking lot toll system. Parking management of the systems is achieved through a mobile
5 phone or a dedicated phone line for internet connection. Also, parking toll is included in user's phone bill.

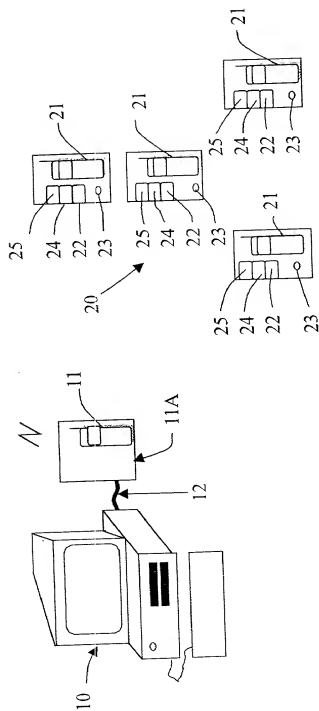


FIG. 1

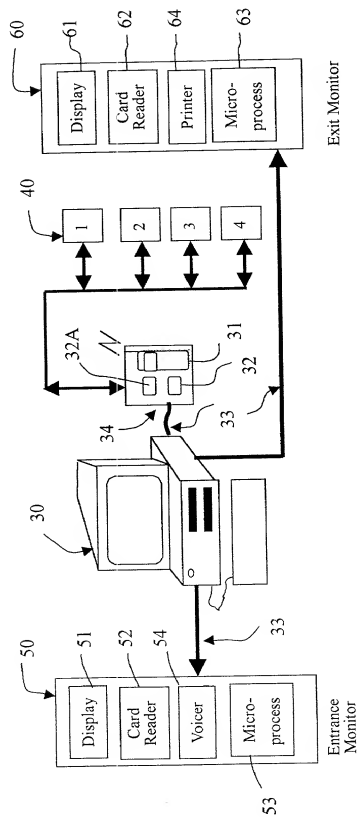


FIG. 2

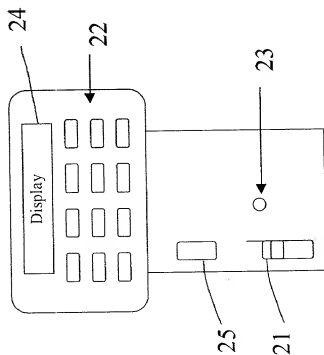


FIG. 5

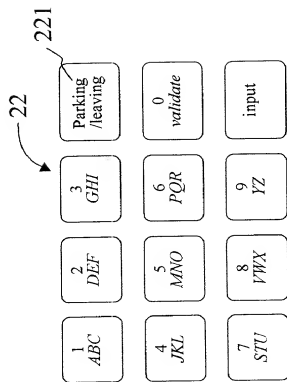


FIG. 6

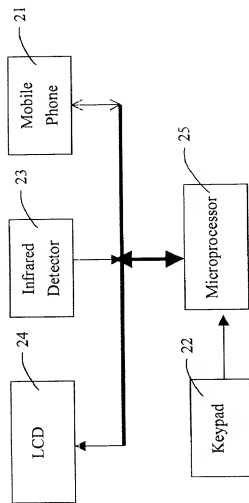


FIG. 7



FIG. 8

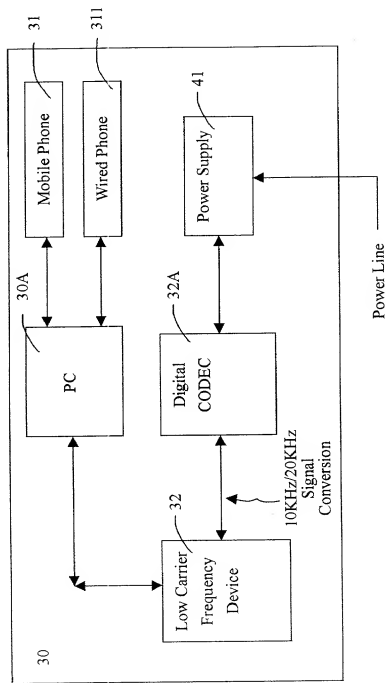


FIG. 9

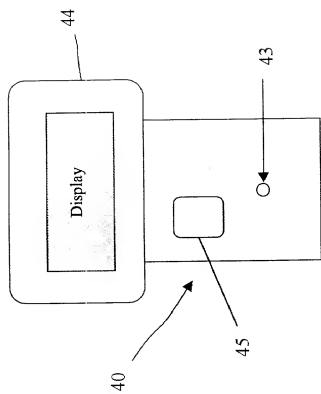


FIG. 10

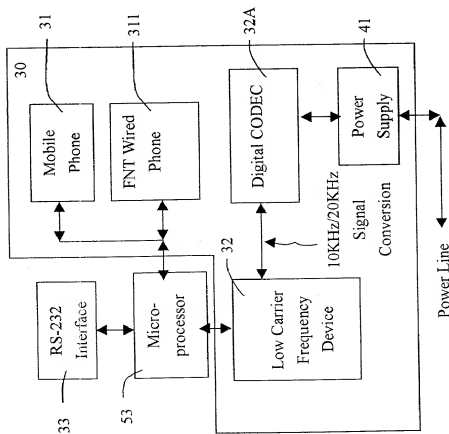


FIG. 11

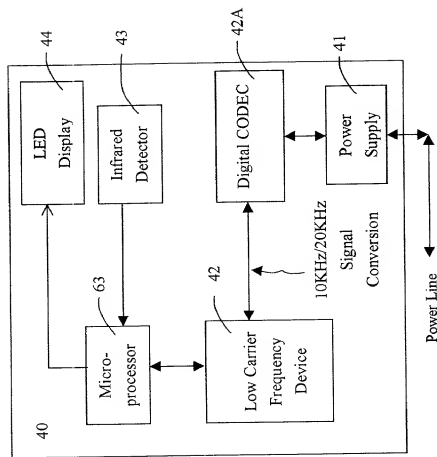


FIG. 12

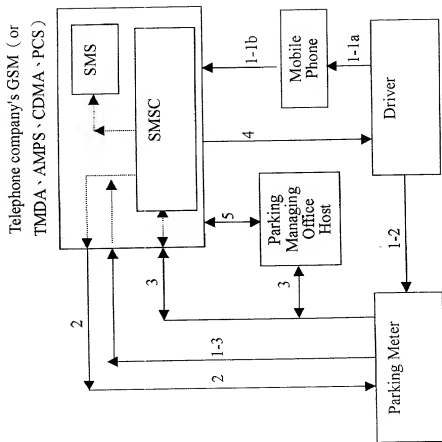


FIG. 13

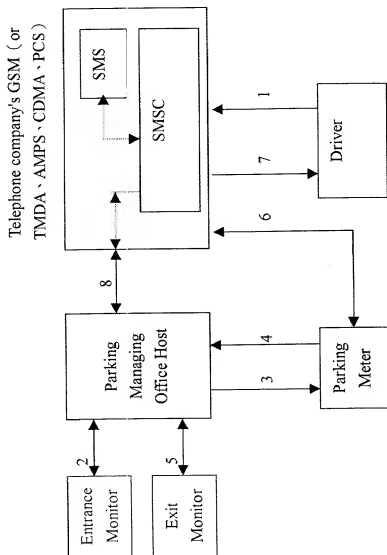


FIG. 14

COMBINED DECLARATION AND POWER OF ATTORNEY

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL,
CONTINUATION, OR C-I-P)

As a below named inventor, I hereby declare that:

TYPE OF DECLARATION

This declaration is of the following type:

(check one applicable item below)

- ☒ original.
☐ design.
☐ supplemental.

NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.

- ☐ national stage of PCT.

NOTE: If one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.

NOTE: See 37 C.F.R. § 1.63(d) (continued prosecution application) for use of a prior nonprovisional application declaration in the continuation or divisional application being filed on behalf of the same or fewer of the inventors named in the prior application.

- ☐ divisional.
☐ continuation.

NOTE: Where an application discloses and claims subject matter not disclosed in the prior application, or a continuation or divisional application names an inventor not named in the prior application, a continuation-in-part application must be filed under 37 C.F.R. § 1.53(b) (application filing requirements — nonprovisional application).

- ☐ continuation-in-part (C-I-P).

INVENTORSHIP IDENTIFICATION

WARNING: If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.

My residence, post office address and citizenship are as stated below, next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

TITLE OF INVENTION

PARKING TOLL SYSTEM

SPECIFICATION IDENTIFICATION

the specification of which:

(complete (a), (b), or (c))

(a) ☒ is attached hereto.

NOTE: "The following combinations of information supplied in an oath or declaration filed on the application filing date with a specification are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration on filing;

"(2) name of inventor(s), and attorney docket number which was on the specification as filed; or

"(3) name of inventor(s), and title which was on the specification as filed."

Notice of July 13, 1995 (1177 O.G. 60).

(b) ☐ was filed on _____, as ☐ Serial No. 0 / _____
or ☐ _____
and was amended on _____ (if applicable).

NOTE: Amendments filed after the original papers are deposited with the PTO that contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

NOTE: "The following combinations of information supplied in an oath or declaration filed after the filing date are acceptable as minimums for identifying a specification and compliance with any one of the items below will be accepted as complying with the identification requirement of 37 CFR 1.63:

"(1) name of inventor(s), and application number (consisting of the series code and the serial number; e.g., 08/123,456);

"(2) name of inventor(s), serial number and filing date;

"(3) name of inventor(s) and attorney docket number which was on the specification as filed;

"(4) name of inventor(s), title which was on the specification as filed and filing date;

"(5) name of inventor(s), title which was on the specification as filed and reference to an attached specification which is both attached to the oath or declaration at the time of execution and submitted with the oath or declaration; or

"(6) name of inventor(s), title which was on the specification as filed and accompanied by a cover letter accurately identifying the application for which it was intended by either the application number (consisting of the series code and the serial number; e.g., 08/123,456), or serial number and filing date. Absent any statement(s) to the contrary, it will be presumed that the application filed in the PTO is the application which the inventor(s) executed by signing the oath or declaration."

Notice of July 13, 1995 (1177 O.G. 60), M.P.E.P. § 601.01(a), 6th ed., rev. 3.

(c) ☐ was described and claimed in PCT International Application No. _____, filed on _____ and as amended under PCT Article 19 on _____ (if any).

SUPPLEMENTAL DECLARATION (37 C.F.R. § 1.67(b))

(complete the following where a supplemental declaration is being submitted)

- ☐ I hereby declare that the subject matter of the
- ☐ attached amendment
- ☐ amendment filed on _____

was part of my/our invention and was invented before the filing date of the original application, above-identified, for such invention.

ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56,

(also check the following items, if desired)

- ☐ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and
- ☐ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 CFR 1.98.

PRIORITY CLAIM (35 U.S.C. §§ 119(a)-(d))

NOTE: "The claim to priority need be in no special form and may be made by the attorney or agent if the foreign application is referred to in the oath or declaration as required by § 1.63. The claim for priority and the certified copy of the foreign application specified in 35 U.S.C. 119(b) must be filed in the case of an interference (§ 1.630), when necessary to overcome the date of a reference relied upon by the examiner, when specifically required by the examiner, and in all other situations, before the patent is granted. If the claim for priority or the certified copy of the foreign application is filed after the date the issue fee is paid, it must be accompanied by a petition requesting entry and by the fee set forth in § 1.17(f). If the certified copy is not in the English language, a translation need not be filed except in the case of interference; or when necessary to overcome the date of a reference relied upon by the examiner; or when specifically required by the examiner, in which event an English language translation must be filed together with a statement that the translation of the certified copy is accurate." 37 C.F.R. § 1.55(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §§ 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

(complete (d) or (e))

- (d) ☒ no such applications have been filed.
- (e) ☐ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

**PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS
(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)-(d)**

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 USC 119
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)
(34 U.S.C. § 119(e))**

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

FILING DATE

_____/_____
_____/_____
_____/_____

**CLAIM FOR BENEFIT OF EARLIER US/PCT APPLICATION(S)
UNDER 35 U.S.C. 120**

- ☐ The claim for the benefit of any such applications are set forth in the attached ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART (C-I-P) APPLICATION.

**ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION**

NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.

POWER OF ATTORNEY

I hereby appoint the following practitioner(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

(list name and registration number)

(check the following item, if applicable)

- ☒ I hereby appoint the practitioner(s) associated with the Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.
- ☐ Attached, as part of this declaration and power of attorney, is the authorization of the above-named practitioner(s) to accept and follow instructions from my representative(s).

SEND CORRESPONDENCE TO

Kenneth Q. Lao

☒ Address

WARE, PRESSOLA, VAN DER SLUYS & ADOLPHSON LLP
Bradford Green, Building Five
755 Main Street, P.O. Box 224
Monroe, CT 06468

DIRECT TELEPHONE CALLS TO:
(Name and telephone number)

Kenneth Q. Lao (203) 261-1234

☒ Customer Number 004955

DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

SIGNATURE(S)

NOTE: Carefully indicate the family (or last) name, as it should appear on the filing receipt and all other documents.

NOTE: Each inventor must be identified by full name, including the family name, and at least one given name without abbreviation together with any other given name or initial, and by his/her residence, post office address and country of citizenship. 37 CFR § 1.63(a)(3).

NOTE: Inventors may execute separate declarations/oaths provided each declaration/oath sets forth all the inventors. Section 1.63(a)(3) requires that a declaration/oath, inter alia, identify each inventor and prohibits the execution of separate declarations/oaths which each sets forth only the name of the executing inventor. 62 Fed. Reg. 53,131, 53,142, October 10, 1997.

Full name of sole or first inventor

Meifen		WANG
(GIVEN NAME)	(MIDDLE INITIAL OR NAME)	FAMILY (OR LAST NAME)
Inventor's signature <u>[Signature]</u>		
Date <u>March 10, 2000</u>	Country of Citizenship <u>Rep. of China</u>	
Residence <u>5700 E. Mexico Ave. DENVER, CO. 80224, U.S.A.</u>		
Post Office Address <u>P.O. BOX 1-79, Taipei 100, Taiwan, R.O.C.</u>		

Full name of second joint inventor, if any

(GIVEN NAME)	(MIDDLE INITIAL OR NAME)	FAMILY (OR LAST NAME)
Inventor's signature _____		
Date _____	Country of Citizenship _____	
Residence _____		
Post Office Address _____		

Full name of third joint inventor, if any

(GIVEN NAME)	(MIDDLE INITIAL OR NAME)	FAMILY (OR LAST NAME)
Inventor's signature _____		
Date _____	Country of Citizenship _____	
Residence _____		
Post Office Address _____		

(check proper box(es) for any of the following added page(s)
that form a part of this declaration)

- ☐ **Signature** for fourth and subsequent joint inventors. Number of pages added _____

. . .

- ☐ **Signature** by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. Number of pages added _____

. . .

- ☐ **Signature** for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. Number of pages added _____

. . .

- ☐ Added page for **signature** by one joint inventor on behalf of deceased inventor(s) where legal representative cannot be appointed in time. (37 CFR 1.47)

. . .

- ☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (C-I-P) application.

☐ Number of pages added _____

. . .

- ☐ Authorization of practitioner(s) to accept and follow instructions from representative.

. . .

(if no further pages form a part of this Declaration,
then end this Declaration with this page and check the following item)

- ☒ This declaration ends with this page.